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National Aeronautics
and Space Adminstration

February 24, 1995

NRA 95-OSS-08

Research Announcement

Origins of Solar Systems Program

APPENDICES A - D

Proposals Due: May 24, 1995

COMPLETED

NASA Research Announcement

Origins of Solar Systems Program

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Appendix A
NRA 95-OSS-08

Origins of Solar Systems Program

I. Scope of the Origins of Solar Systems Program

This NASA Research Announcement (NRA) solicits basic research proposals to conduct scientific investigations related to understanding the formation and early evolution of planetary systems and to provide the fundamental research and analysis necessary to detect and characterize other planetary systems. These investigations may involve analytical and numerical modeling, laboratory research and observational studies in the following areas: star formation and the relationship to planetary system formation, solar nebula processes, accumulation and dynamical evolution, analysis of primitive materials, and the detection of other planetary systems. The investigations should directly support the goals related to understanding planetary system formation.

For example, key questions addressed by the research activities supported by this program may include: What was the initial mass, structure, motions, and temperature of the solar nebula, and the timescales over which planets formed? What are the conditions of star formation that lead to a single star surrounded by a protoplanetary disk? How was angular momentum transported in the nebula? What determined the masses of the giant planets? By what mechanism did the most primitive bodies in the solar system accumulate? What factors influence the growth of planetary embryos into planets? What processes were responsible for the patterns of chemical fractionation observed in the primitive meteorites and the volatile abundances in the planets?

A unique goal of the Origins program is to realize the existing potential for complementary interdisciplinary efforts to solve key scientific questions. To achieve this goal, proposals are encouraged which involve joint research efforts by investigators from different scientific communities. Interdisciplinary investigations may include, for example, studies of nebular chemistry and dynamics to understand the composition of primitive volatile-rich solar system bodies, or collaborations between observational astronomers and modelers to study the initial collapse of a protostellar cloud to form a nebula.

Proposals for topical conferences, workshops, symposia, or other new initiatives related to the Origins program are also solicited through this NRA.

Planetary Systems Detection

The Origins program will support the ground-based observational efforts to detect and characterize other planetary systems as part of the ASEPS-0 (Astronomical Studies of Extrasolar Planetary Systems) program. ASEPS-0 research will strive to use optimum instrumentation to reach the ASEPS goals and to that end the observing projects will not be limited to the primary research assets: the Keck Observatory or Infrared Telescope Facility (IRTF) facilities. Investigations may include detection projects to continue ongoing search programs and to use innovative new techniques, new instruments, and/or telescopes to cover as much of the extrasolar planet search space as possible.

II. Program Management Information

Proposals are sought for either new research projects or the continuation of existing investigations that fall within the scope of the Origins program. Both types of investigations will compete in the same review, evaluation, and selection process.

Proposals may be submitted for periods of performance of 1 to 3 years. However, funding for subsequent fiscal years will be based on the availability of funds as well as the evaluation and selection of progress report proposals.

In case of a conflict between information outlined in this Appendix (A) and those in other appendices to the NRA, the provisions in Appendix A take precedence.

A. The "Conformance to Guidance" and "Proposal Contents" sections of Appendix B are modified as follows:

The first four pages of each proposal constitute summary sheets that must follow the sample formats in Appendix C. Note that the "Transmittal Letter or Prefatory Material" sections still apply and that complete, detailed budgets and cost breakdowns must still appear in the main body of this proposal. At least one copy of the proposal must bear the signature of a responsible official or authorized representative of the organization, or any other person authorized to commit contractually or obligate the organization (unless the signature appears on the proposal itself). The remainder of the proposal immediately following the summary pages (with the exception of the abstract) should be prepared using the named Appendix B categories (as applicable) in the order listed. One set of pertinent reprints may be included with your proposal.

Also included in Appendix C are form ED 80-0004 "Certification Regarding Drug-Free Workplace Requirements Grantees Other Than Individuals," form ED GCS-008 (REV. 12/88), "Certification Regarding Debarment, Suspension, and Other Responsibility Matters Primary Covered Transactions," and the "Certification Regarding Lobbying" form required for all proposals with total budgets greater than $100,000. One set of these completed forms must be included with the original signature version of all proposals.

Proposals should also include a list of current and pending research support from all other sources. Appendix C contains a format for this listing.

B. The following statements are added to the "Project Description" section of Appendix B:

This section describes and justifies the proposed research. A brief introduction, background, and justification should be included. The description should provide a clear and concise statement of the research proposed, identifying and relating the key elements. Give attention to the nature and amount of experimental data to be collected; describe the methods or approaches to be used, as appropriate; discuss the advantages of the proposed approach over alternatives; and discuss the significance of the expected results. The content of the proposal should provide sufficient detail to enable a reviewer to make evaluative judgments with respect to all the factors identified in Appendix B, Paragraph 13, "Evaluation Factors" of this NRA.

A specific titled section describing the relevance of the proposed research to NASA and the Origins program objectives should be included in the body of the proposal. This section should address the relevance of the proposed research to increasing the scientific understanding of the origin of solar systems and the relevance of the proposed research to specific Origins of Solar System program objectives, such as those identified in Section I, Appendix A of this NRA.

The Project Description should clearly identify the roles and responsibilities of any co-investigators or collaborators for the proposed research. Generally, co-investigators are expected to make a critical or significant contribution to the proposed research and may receive a portion of the funding if the proposal is selected. Collaborators are generally not expected to receive funding under the proposal.

To facilitate the recycling of proposals after review, proposals should be submitted on plain, white paper only. This precludes the use of cardboard stock, plastic covers, colored paper, etc.

C. The "Length" section is modified as follows:

It is required that each full proposal be limited to ten (10) single-spaced, typewritten (standard font) pages not including: title pages, abstract, budget summary, figures, tables, and references.

D. Progress Report Proposals

Appendix B discusses "Renewal Proposals." This terminology has been replaced by "Progress Report Proposals." Brief Progress Report Proposals must be submitted by May 24, 1995, for second or third year funding. Both full proposals and progress report proposals will compete in the same review process, although there may be differences in the details of the evaluation process.

It is required that progress report proposals include a report of progress made during the past year and a brief statement of planned work and a budget for the coming year. These proposals are limited to 3 - 5 single-spaced, typewritten (standard font) pages including abstracts, budget pages, etc. A set of relevant reprints may be included with proposals.

F. Late Proposals

The section on "Late Proposals" is modified to contain the following addition: Late proposals or late progress report proposals will not be considered for funding in FY 1996.

G. Evaluation Techniques

The section on "Evaluation Techniques" contains the following additions: Peer review of proposals received in response to an NRA may involve individual scientists who currently receive support from NASA sponsored research programs. Also, regardless of the technique, the final decisions are always made by a designated NASA selection official incorporating considerations related to funds available and to the overall balance of the program.

III. Guidelines for Foreign Participation

NASA accepts proposals from all countries. Proposals from foreign entities should not include a cost plan. Foreign proposals and U.S. proposals which include foreign participation must be endorsed by the respective government agency or funding/sponsoring institution in that country from which the foreign participant is proposing. Such endorsement should indicate:

1. The proposal merits careful consideration by NASA.

2. If the proposal is selected, sufficient funds will be made available to undertake the activity as proposed.

Proposals, along with the requested number of copies and Letters of Endorsement must be forwarded to NASA in time to arrive before the deadline established for this NRA. These documents should be sent to:

Origins of Solar Systems Review Panel
The Lunar and Planetary Institute
3600 Bay Area Boulevard
Houston, TX 77058
USA
Tel. (713) 486-2149

One copy of the documents should be sent to:

Ms. Shiron Gaines
NRA 95-0SS-08
International Relations Division
Code IR
NASA Headquarters
300 E Street SW
Washington, DC 20546
USA

All proposals must be typewritten in English. All non-U.S. proposals will undergo the same evaluation and selection process as those originating in the U.S. Non-U.S. proposals, and U.S. proposals which include non-U.S. participation, must follow all other guidelines and requirements described in this NRA.

All proposals must be received before the established closing date; those received after the closing date will be treated in accordance with NASA's provisions for late proposals. Sponsoring non-U.S. agencies may, in exceptional situations, forward a proposal without endorsement to the above address, if review and endorsement are not possible before the announced closing date. In such cases, however, the NASA International Relations Division should be advised when a decision on endorsement can be expected.

Successful and unsuccessful proposers will be contacted directly by the NASA Program Office coordinating the NRA. Copies of these letters will be sent to the sponsoring government agency.

Should a non-U.S. proposal or a U.S. proposal with non-U.S. participation be selected, the NASA International Relations Division will arrange with the non-U.S. sponsoring agency for the proposed participation on a no exchange of funds basis, in which NASA and the non-U.S. sponsoring agency will each bear the cost of discharging its respective responsibilities. Depending on the nature and extent of the proposed cooperation, these arrangements may entail:

(1) A letter of notification by NASA; and
(2) An exchange of letters between NASA and the sponsoring Government agency.

NRA APPENDIX B

GUIDELINES FOR RESPONDING TO
NASA RESEARCH ANNOUNCEMENTS (NRA)
FOR SOLICITED BASIC RESEARCH PROPOSALS

AUGUST 1988

OFFICE OF PROCUREMENT
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, DC 20546

INSTRUCTIONS FOR RESPONDING TO NASA RESEARCH ANNOUNCEMENTS FOR SOLICITED RESEARCH PROPOSALS

(AUGUST 1988)

1. FOREWORD

a. NASA depends upon industry, educational institutions and other nonprofit organizations for most of its research efforts. While a number of mechanisms have been developed over the years to inform the research community of those areas in which NASA has special research interests, these instructions apply only to "NASA Research Announcements," a form of "broad agency announcement" described in 6.102(d)(2) and 35.01€ of the Federal Acquisition Regulation (FAR). The "NASA Research Announcement (NRA)" permits competitive selection of research projects in accordance with statute while at the same time preserving the traditional concepts and understandings associated with NASA sponsorship of research.

b. These instructions are Appendix I to 18-70.203 of the NASA Federal Acquisition Regulation Supplement.

2. POLICY

a. NASA fosters and encourages the submission of research proposals relevant to agency mission requirements by solicitations, "NASA Research Announcements," which describe research areas of interest to NASA. Proposals received in response to an NRA will be used only for evaluation purposes.

b. NASA does not allow a proposal, the contents of which are not available without restriction from another source, or any unique ideas submitted in response to an NRA to be used as the basis of a solicitation or in negotiation with other organizations, nor is a pre-award synopsis published for individual proposals.

c. A solicited proposal that results in a NASA award becomes part of the record of that transaction and may be available to the public on specific request; however, information or material that NASA and the awardee mutually agree to be of a privileged nature will be held in confidence to the extent permitted by law, including the Freedom of Information Act.

3. PURPOSE

These instructions are intended to supplement documents identified as "NASA Research Announcements." The NRAs contain programmatic information and certain "NRA-specific" requirements which apply only to proposals prepared in response to that particular announcement. These instructions contain the general proposal preparation information which applies to responses to all NRAs.

4. RELATIONSHIP TO AWARD

a. A contract, grant, cooperative agreement, or other agreement may be used to accomplish an effort funded on the basis of a proposal submitted in response to an NRA. NASA does not have separate "grant proposal" and "contract proposal" categories, so all proposals may be prepared in a similar fashion. NASA will determine the appropriate instrument.

b. Grants are generally used to fund basic research in educational and nonprofit institutions, while research in other private sector organizations is accomplished under contract. Additional information peculiar to the contractual process (certifications, cost and pricing data, facilities information, etc.) will be requested, as necessary, as the procurement progresses. Contracts resulting from NRAs are subject to the FederalAcquisition Regulation and the NASA FAR Supplement (NHB 5100.4). Any resultant grants or cooperative agreements will be awarded and administered in accordance with the NASA Grant and Cooperative Agreement Handbook (NHB 5800.1).

5. CONFORMANCE TO GUIDANCE

a. NASA does not have any mandatory forms or formats for preparation of responses to

NRAs; however, it is requested that proposals conform to the procedural and submission guidelines covered in these instructions. In particular, NASA may accept proposals without discussion; hence, proposals should initially be as complete as possible, and be submitted on the proposers' most favorable terms.

b. In order to be considered responsive to the solicitation, a submission must, at a minimum, present a specific project within the areas delineated by the NRA; contain sufficient technical and cost information to permit a meaningful evaluation; be signed by an official authorized to legally bind the submitting organization; not merely offer to perform standard services or to just provide computer facilities or services; and not significantly duplicate a more specific current or pending NASA solicitation. NASA reserves the right to reject any or all proposals received in response to an NRA when such action is considered in the best interest of the Government.

6. NRA-SPECIFIC ITEMS

a. Several proposal submission items will appear in the NRA itself. These include: the unique NRA identifier; when to submit proposals; where to send proposals; number of copies required; and sources for more information.

b. Items included in these instructions may be supplemented by the NRA, as circumstances warrant. Examples are: technical points for special emphasis; additional evaluation factors; and proposal length.

7. PROPOSAL CONTENTS

a. The following general information is needed in all proposals in order to permit consideration in an objective manner. NRAs will generally specify topics for which additional information or greater detail is desirable. Each proposal copy shall contain all submitted material, including a copy of the transmittal letter if it contains substantive information.

b. Transmittal Letter or Prefatory Material

1) The legal name and address of the organization and specific division or campus identification if part of a larger organization;

2) A brief, scientifically valid project title intelligible to a scientifically literate reader and suitable for use in the public press;

3) Type of organization: e.g., profit, nonprofit, educational, small business, minority, women-owned, etc.;

4) Name and telephone number of the principal investigator and business personnel who may be contacted during evaluation or negotiation;

5) Identification of any other organizations that are currently evaluating a proposal for the same efforts;

6) Identification of the specific NRA, by number and title, to which the proposal is responding;

7) Dollar amount requested of NASA, desired starting date, and duration of project;

8) Date of submission; and

9) Signature of a responsible official or authorized representative of the organization, or any other person authorized to legally bind the organization (unless the signature appears on the proposal itself).

c. Restriction on Use and Disclosure of Proposal Information

It is NASA policy to use information contained in proposals for evaluation purposes only. While this policy does not require that the proposal bear a restrictive notice, offerors or quoters should, in order to maximize protection of trade secrets or other information that is commercial or financial and confidential or privileged, place the following notice on the title page of the proposal and specify the information subject to the notice by inserting appropriate identification, such as page numbers, in the notice. In any event, information (data) contained in proposals will be protected to the extent permitted by law, but NASA assumes no liability for use and disclosure of information not made subject to the notice.

NOTICE

Restriction on Use and Disclosure
of Proposal Information

The information (data) contained in [insert page numbers or other identification] of this proposal constitutes a trade secret and/or information that is commercial or financial and confidential or privileged. It is furnished to the Government in confidence with the understanding that it will not, without permission of the offeror, be used or disclosed other than for evaluation purposes; provided, however, that in the event a contract (or other agreement) is awarded on the basis of this proposal the Government shall have the right to use and disclose this information (data) to the extent provided in the contract (or other agreement). This restriction does not limit the Government's right to use or disclose this information (data) if obtained from another source without restriction.

d. Abstract

Include a concise (200-300 word if not otherwise specified in the NRA) abstract describing theobjective of the proposed effort and the method of approach.

e. Project Description

1) The main body of the proposal shall be a detailed statement of the work to be undertaken and should include objectives and expected significance; relation to the present state of knowledge in the field; and relation to previous work done on the project and to related work in progress elsewhere. The statement should outline the general plan of work, including the broad design of experiments to be undertaken and an adequate description of experimental methods and procedures. The project description should be prepared in a manner that addresses the evaluation factors in these instructions and any additional specific factors in the NRA. Any substantial collaboration with individuals not referred to in the budget or use of consultants should be described. Note, however, that subcontracting significant portions of a research project is discouraged.

2) When it is expected that the effort will require more than one year for completion, the proposal should cover the complete project to the extent that it can be reasonably anticipated. Principal emphasis should, of course, be on the first year of work, and the description should distinguish clearly between the first year's work and work planned for subsequent years.

f. Management Approach

For large or complex efforts involving interactions among numerous individuals or other organizations, plans for distribution of responsibilities and any necessary arrangements for ensuring a coordinated effort should be described. Aspects of any required intensive working relations with NASA field centers that are not logical inclusions elsewhere in the proposal should be described in this section.

g. Personnel

The principal investigator is responsible for direct supervision of the work and participates inthe conduct of the research regardless of whether or not compensation is received under the award. A short biographical sketch of the principal investigator, a list of principal publications and any exceptional qualifications should be included. Omit social security number and other personal items which do not merit consideration in evaluation of the proposal. Give similar biographical information on other senior professional personnel who will be directly associated with the project. Give the names and titles of any other scientists and technical personnel associated substantially with the project in an advisory capacity. Universities should list the approximate number of students or other assistants, together with information as to their level of academic attainment. Any special industry-university cooperative arrangements should be described.

h. Facilities and Equipment

1) Describe available facilities and major items of equipment especially adapted or suited to the proposed project, and any additional major equipment that will be required. Identify any Government-owned facilities, industrial plant equipment, or special tooling that are proposed for use on the project.

2) Before requesting a major item of capital equipment, the proposer should determine if sharing or loan of equipment already within the organization is a feasible

alternative to purchase. Where such arrangements cannot be made, the proposal should so state. The need for items that typically can be used for both research and non-research purposes should be explained.

i. Proposed Costs

1) Proposals should contain cost and technical parts in one volume; do not use separate "confidential" salary pages. As applicable, include separate cost estimates for salaries and wages; fringe benefits; equipment; expendable materials and supplies; services; domestic and foreign travel; ADP expenses; publication or page charges; consultants; subcontracts; other miscellaneous identifiabledirect costs; and indirect costs. List salaries and wages in appropriate organizational categories (e.g., principal investigator, other scientific and engineering professionals, graduate students, research assistants, and technicians and other non-professional personnel). Estimate all manpower data in terms of man-months or fractions of full-time.

2) Explanatory notes should accompany the cost proposal to provide identification and estimated cost of major capital equipment items to be acquired; purpose and estimated number and lengths of trips planned; basis for indirect cost computation (including date of most recent negotiation and cognizant agency); and clarification of other items in the cost proposal that are not self-evident. List estimated expenses as yearly requirements by major work phases. (Standard Form 1411 may be used.)

3) Allowable costs are governed by FAR Part 31 and the NASA FAR Supplement Part 18-31 (and OMB Circulars A-21 for educational institutions and A-122 for nonprofit organizations).

j. Security

Proposals should not contain security classified material. However, if the proposed research requires access to or may generate security classified information, the submitter will be required to comply with applicable Government security regulations.

k. Current Support

For other current projects being conducted by the principal investigator, provide title of project, sponsoring agency, and ending date.

l. Special Matters

1) Include any required statements of environmental impact of the research, human subject or animal care provisions, conflict of interest, or on such other topics as may be required by the nature of the effort and current statutes, executive orders, or other current Government-wide guidelines.

2) Proposers should include a brief description of the organization, its facilities, and previous work experience in the field of the proposal. Identify the cognizant Government audit agency, inspection agency, and administrative contracting officer, when applicable.

8. RENEWAL PROPOSALS

a. Renewal proposals for existing awards will be considered in the same manner as proposals for new endeavors. It is not necessary that a renewal proposal repeat all of the information that was in the original proposal upon which the current support was based. The renewal proposal should refer to its predecessor, update the parts that are no longer current, and indicate what elements of the research are expected to be covered during the period for which extended support is desired. A description of any significant findings since the most recent progress report should be included. The renewal proposal should treat, in reasonable detail, the plans for the next period, contain a cost estimate, and otherwise adhere to these instructions.

b. NASA reserves the right to renew an effort either through amendment of an existing contract or by a new award.

9. LENGTH

Unless otherwise specified in the NRA, every effort should be made to keep proposals as brief as possible, concentrating on substantive material essential for a complete understanding of the project. Experience shows that few proposals need exceed 15-20 pages. Any necessary detailed information, such as reprints, should be included as attachments rather than in the main body of the

proposal. A complete set of attachments is necessary for each copy of the proposal. As proposals are not returned, avoid use of "one-of-a-kind" attachments; their availability may be mentioned in the proposal.

10. JOINT PROPOSALS

a. Some projects involve joint efforts among individuals in different organizations or mutual efforts of more than one organization. Where multiple organizations are involved, the proposal may be submitted by only one of them. In this event, it should clearly describe the role to be played by the other organizations and indicate the legal and managerial arrangements contemplated. In other instances, simultaneous submission of related proposals from each organization might be appropriate, in which case parallel awards would be made.

b. Where a project of a cooperative nature with NASA is contemplated, the proposal should describe the contributions expected from any participating NASA investigator and agency facilities or equipment which may be required. However, the proposal must be confined only to that which the proposing organization can commit itself. "Joint" proposals which purport to specify the internal arrangements NASA will actually make are not acceptable as a means of establishing an agency commitment.

11. LATE PROPOSALS

A proposal or modification thereto received after the date or dates specified in an NRA may still be considered if the selecting official deems it to offer NASA a significant technical advantage or cost reduction.

12. WITHDRAWAL

Proposals may be withdrawn by the proposer at any time. Offerors are requested to notify NASA if the proposal is funded by another organization or of other changed circumstances which dictate termination of evaluation.

13. EVALUATION FACTORS

a. Unless otherwise specified in the NRA, the principal elements (of approximately equalweight) considered in evaluating a proposal are its relevance to NASA's objectives, intrinsic merit, and cost

b. Evaluation of a proposal's relevance to NASA's objectives includes the consideration of the potential contribution of the effort to NASA's mission.

c. Evaluation of its intrinsic merit includes the consideration of the following factors, none of which is more important than any other:

1) Overall scientific or technical merit of the proposal or unique and innovative methods, approaches, or concepts demonstrated by the proposal.

2) The offeror's capabilities, related experience, facilities, techniques, or unique combinations of these which are integral factors for achieving the proposal objectives.

3) The qualifications, capabilities, and experience of the proposed principal investigator, team leader, or key personnel who are critical in achieving the proposal objectives.

4) Overall standing among similar proposals available for evaluation and/or evaluation against the known state-of-the-art.

d. Evaluation of the cost of a proposed effort includes the consideration of the realism and reasonableness of the proposed cost and the relationship of the proposed cost to available funds.

14. EVALUATION TECHNIQUES

Selection decisions will be made following peer and/or scientific review of the proposals. Several evaluation techniques are regularly used within NASA. In all cases, however, proposals are subject to scientific review by discipline specialists in the area of the proposal. Some proposals are reviewed entirely in-house where NASA has particular competence; others are evaluated by a combination of in-house people and selected external reviewers, while yet othersare subject to the full external peer review technique (with due regard for conflict-of-interest and protection of proposal information), such as by mail

or through assembled panels. Regardless of the technique, the final decisions are always made by a designated NASA selecting official. A proposal which is scientifically and programmatically meritorious, but which is not selected for award during its initial review under the NRA may be included in subsequent reviews unless the proposer requests otherwise.

15. SELECTION FOR AWARD

a. When a proposal is not selected for award, and the proposer has indicated that the proposal is not to be held over for subsequent reviews, the proposer will be notified that the proposal was not selected for award. NASA will notify the proposer and explain generally why the proposal was not selected. Proposers desiring additional information may contact the selecting official who will arrange a debriefing.

b. When a proposal is selected for award, negotiation and award will be handled by the procurement office in the funding installation. The proposal is used as the basis for negotiation with the submitter. Formal RFPs are not used to obtain additional information on a proposal selected under the NRA process. However, the contracting officer may request certain business data and may forward a model contract and other information which will be of use during the contract negotiation.

16. CANCELLATION OF NRA

NASA reserves the right to make no awards under this NRA and, in the absence of program funding or for any other reason, to cancel this NRA by having a notice published in the Commerce Business Daily. NASA assumes no liability for canceling the NRA or for anyone's failure to receive actual notice of cancellation. Cancellation may be followed by issuance and synopsis of a revised NRA, since amendment of an NRA is normally not permitted.

Required and Recommended Forms

- Origins of Solar Systems Program Cover Pages
- Proposal Summary
- Budget Summary
- Current and Pending Support
- Certification Regarding Debarment, Suspension, and Other Responsibility Matters
- Certification Regarding Drug-Free Workplace Requirements
- Certification Regarding Lobbying

ORIGINS OF SOLAR SYSTEMS PROGRAM

Log No.
Date Received:

Do not write in the above area.

NRA #: _____ **Grant/Contract/RTOP #:** _____

Date Submitted: _____

Please check all that apply to this NRA:

__ **Theory** __ **Observations** __ **Cosmochemistry** __ **Formation & Detection**

__ **Full Proposal: New Research** __ **Full Proposal: Renew Ongoing Research** __ **Progress Proposal**

Research Area: _____
(Indicate main research area; i.e., inner planets, outer planets, comets, satellites, etc.)

Type of Organization: _____
(Profit, non-profit, university, etc.)

Proposal Title: _____

Principal Investigator (Name): _____

Institution: _____

Address: _____

City/State/Zip Code: _____

Telephone: (_____)_____ **Fax:** (_____)

Internet Address: _____

_____
Signature Date

Institutional Authorization Official:

_____
Signature Date

Address: _____

City/State/Zip Code: _____

Telephone: (_____)_____ **Fax:** (_____)

Institution Contact or Business Representative:

Telephone: (_____)_____ **Fax:** (_____)

Please list all names and institutions below (use separate sheet if necessary)

Co-Investigators: **Institutions:**

Collaborators: **Institutions:**

Proposed Duration of Project: _____ months

Desired Start Date: _____ **End Date:** _____

Budget Request:

Year 1	Year 2	Year 3
$_____	$_____	$_____

Total Funding Requested: $

Grant/Contract/RTOP# _____

PROPOSAL SUMMARY

PRINCIPAL INVESTIGATOR:
(Name, Address, Telephone Number) _____
_____
_____
_____

CO-INVESTIGATORS:
(Name Only) _____
_____

PROPOSAL TITLE: _____
_____
_____

ABSTRACT: (Type single-spaced below line. Lettered paragraphs (a) through (d) should include: a. brief summary of the overall objectives and justification of the work; b. brief statement of the accomplishments of the prior year, or "new proposal;" c. brief listing of what will be done this year, as well as how and why; and d. one or two of your recent publications relevant to proposed work.)

BUDGET SUMMARY

Principal Investigator/Institution: _____

From: _____ to _____ (Date)

		NASA Use Only	
1. Direct Labor (salaries, wages, and fringe benefits)	_____	_____	_____
2. Other Direct Costs:			
a. Subcontracts	_____	_____	_____
b. Consultants	_____	_____	_____
c. Equipment	_____	_____	_____
d. Supplies	_____	_____	_____
e. Travel	_____	_____	_____
f. Other	_____	_____	_____
3. Indirect Costs	_____	_____	_____
4. Other Applicable Costs	_____	_____	_____
5. Subtotal - Estimated Costs	_____	_____	_____
6. Less Proposed Cost Sharing (if any)	_____	_____	_____
7. Carryover Funds (if any) a. Anticipated amount _____ b. Amount used to reduce budget	_____	_____	_____
8. Total Estimated Costs	_____	_____	XXXXXXXXX
Approved Budget	XXXXXXXXX	XXXXXXXXX	_____

SUMMARY: (By task for current year. Approximate breakdown: nearest $K, nearest 0.1 person-yr)

Task	Short Title	Funds $K	Sen. Res.	Post-Doc.	Stu.	Tech.	Other
1.	_____	_____	_____	_____	_____	_____	_____
2.	_____	_____	_____	_____	_____	_____	_____
3.	_____	_____	_____	_____	_____	_____	_____
4.	_____	_____	_____	_____	_____	_____	_____

Instructions

1. Provide a separate budget form for each year of proposed research and a summary form.
2. Grantee estimated costs should be entered in the first column. Columns two and three are for NASA use only. Column three represents the approved grant budget.
3. Provide in attachments to the budget summary the detailed computations of estimates in each cost category, along with any narrative explanation required to fully explain proposed costs.

Additional Instructions on Next Page

Specific Costs

1. Direct Labor (salaries, wages, and fringe benefits). Enclosures should list number and titles of personnel, amount of time devoted to the grant, and rates of pay.

2. Other Direct Costs:

   a. Subcontracts - Enclosures should describe the work to be subcontracted, estimated amount, recipient (if known), and the reason for subcontracting this effort.
   b. Consultants - Identify consultants to be used, why they are necessary, time to be spent on the project, and rates of pay.
   c. Equipment - List separately and explain the need for items of equipment exceeding $1,000. Describe the basis for the estimated cost.
   d. Supplies - Provide general categories of needed supplies, the methods of acquisition, estimated cost, and the basis for the estimate.
   e. Travel - List the proposed trips individually, describe their purpose in relation to the grant, provide dates and destinations where known, and explain how the cost for each was derived.
   f. Other - Enter the total of any other direct costs not covered by 2.a. through 2.e. Enclose an itemized list explaining the need for each item and the basis for the estimate.

3. Indirect Costs - Identify indirect cost rate(s) and base(s) as approved by the cognizant Federal agency, including the effective period of the rate. If unapproved rates are used, explain why and include a computational basis for the indirect expense pool and corresponding allocation base for each rate.

4. Other Applicable Costs - Enter the total of any other applicable costs not covered by 1. through 3. Enclose an itemized list explaining the need for each item and the basis for the estimate.

5. Subtotal - Estimated Costs - Enter the sum of items 1., 2.a., through 2.f., 3., and 4.

6. Less Proposed Cost Sharing (if any) - Enter the amount proposed, if any. If cost sharing is based on specific cost items, identify each item and amount in enclosures.

7. Less Carryover Funds (if any) - Enter the dollar amount of any funds that are expected to be available for carryover from the prior budget period.

8. Total Estimated Costs - Enter the total after subtracting items 6. and 7. from item 5.

LIST CURRENT AND PENDING RESEARCH SUPPORT FROM ALL OTHER SOURCES

This list should include all current research support from all other sources. It must include the proposed project and all other research requiring a part or portion of time of the principal investigator and other senior personnel. The number of person-months must be stated regardless of the source of the support. Please provide this information in the following form:

I. Name of Principal Investigator

A. Current Support

1. Source of Support
2. Project Title and Short Abstract
3. Award Amount
4. Period Covered by Award
5. Person-Months
6. Location where research is/will be performed

B. Pending Proposals (including renewal applications)

1. Source of Support
2. Project Title and Short Abstract
3. Award Amount
4. Period Covered by Award
5. Person-Months
6. Location where research is/will be performed

II. Names of Co-Investigators

A. Current Support

1. Source of Support
2. Project Title and Short Abstract
3. Award Amount
4. Period Covered by Award
5. Person-Months
6. Location where research is/will be performed

B. Pending Proposals (including renewal applications)

1. Source of Support
2. Project Title and Short Abstract
3. Award Amount
4. Period Covered by Award
5. Person-Months
6. Location where research is/will be performed

III. Other agencies to which this proposal, or parts thereof, has been submitted.

Certification Regarding
Debarment, Suspension, and Other Responsibility Matters
Primary Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 34 CFR Part 85, Section 85.510, Participant's responsibilities. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211). Copies of the regulation may be obtained by contracting the U.S. Department of Education, Grants and Contracts Service, 400 Maryland Avenue, S.W. (Room 3633 GSA Regional Office Building No. 3), Washington, DC. 20202-4725, telephone (202) 732-2505.

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statues or commission of embezzlement theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name PR/Award Number or Project Name

Name and Title of Authorized Representative

Signature Date

ED Form GCS-008 (REV.12/88)

Certification Regarding Drug-Free Workplace Requirements
Grantees Other Than Individuals

This certification is required by the regulations implementing the Drug-Free Workplace Act of 1988, 34 CFR Part 85, Subpart F. The regulations, published in the January 31, 1989 Federal Register, require certification by grantees, prior to award, that they will maintain a drug-free workplace. The certification set out below is a material representation of fact upon which reliance will be placed when the agency determines to award the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or governmentwide suspension or debarment (see 34 CFR Part 85, Sections 85.615 and 85.620).

This grantee certifies that it will provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing a drug-free awareness program to inform employees about -

(1) The dangers of drug abuse in the workplace;
(2) The grantee's policy of maintaining a drug-free workplace;
(3) Any available drug counseling, rehabilitation, and employee assistance programs, and
(4) The penalties that may be imposed upon employees for drug abuse violations in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will -

(1) Abide by the terms of the statement; and
(2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction;

(e) Notifying the agency within ten days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction;

(f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted -

(1) Taking appropriate personnel action against such an employee, up to and including termination; or
(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraph (a), (b), (c), (e), and (f).

Organization Name | PR/Award Number or Project Name

Name and Title of Authorized Representative

Signature | Date

ED [illegible]

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000, and not more than $100,000 for each such failure.

_____

Signature and Date

_____

Name and Title of Authorized Representative

_____

Organization Name

Access and Use of Supercomputer and Visualization Facilities at Ames Research Center

A proposer may request the use of NASA supercomputer capabilities available at Ames Research Center. These facilities include state of the art high-speed vector and parallel processors, workstation clusters, advanced graphics and visualization software, on-line mass storage, personal consultation, and a 24-hour hot line or help desk.

The proposal should identify the computational facilities needed for the investigation and provide an estimate of the number of Cray C90 single processor hours required. (A C90 processor hour is equivalent to 2.5 Cray YMP hours.) The estimate of computer time is to be included in the budget summary sheet. This will be costed at a rate of $150 per C90 single processor hour. Even though the initial request is expressed in terms of C90 hours, Ames is committed to helping OSS users determine and implement the most appropriate and cost-effective platform for their computational needs. Dr. Bruce F. Smith (415-604-5515) is the initial point of contact at Ames for Code S users.

A. Supercomputer and Visualization Facilities at Ames Research Center. The computational facilities located at Ames are part of an ongoing commitment to develop and provide advanced computational systems for the support of research and applications in aeronautics and space research. These facilities include the National Aerodynamic Simulation (NAS) Facility which has served remote users in the academic, industrial, and defense sectors since 1987. As the program evolves, it is envisioned that an appropriate mix of vector supercomputer resources and highly parallel machine resources will be available to the scientific community. Ames is committed to assisting OSS users to determine and implement the most appropriate and cost effective platform for their computational needs. The computational systems at Ames that would be made available in this program include the following:

B. Cray C90's: 8 processor machine, 128 MW central memory plus 512 MW SSD (solid state storage device), 16 processor machine, 1024 MW central memory plus 1024 MW SSD. The larger machine is the Numerical Aerodynamic Simulation (NAS) C90.

   The throughput for a C90 single processor is approximately 2.5 times that of a Cray YMP single processor and 4–5 times the throughput of a Cray 2 single processor. The Cray C90 has a sustained speed of 3GFLOPS (billion floating point operations per second) for a job mix of computational physics codes.

C. Mass storage: 96 gigabytes on-line disk storage. Three Storage Technology cartridge tape robots (approximately 7 terabytes of storage).

D. State of the art graphics and visualization are often an integral part of research in computational physics and chemistry. Several graphics programs and libraries for visualizing the results of computational aerodynamics and physics have been developed at ARC. These are readily available and in many cases are easily ported to an investigator's home institution. The graphics programs include: PLOT3D, RIP (Remote Interactive Particle-tracing), GAS (Graphics Animation System), FAST (Flow Analysis Software Toolkit), SURF (Surface Modeling Program), ARCGraph GRAFIX Library, and others. Successful proposals can take advantage of these developments in visualization.

E. Networking requirements will be addressed by the networking capabilities at Ames, particularly the NASA Science Internet (NSI). The NSI Project is chartered to provide high bandwidth internet connectivity for investigators funded by the Office of Space Science and other organizations at Headquarters. The process is well established and makes it possible for investigators to have high bandwidth access to the internet and to Ames. It is quite likely that most, if not all, have such connectivity now. The resources required will depend on the participants.

NASA Research Announcement (NRA)/Announcement of Opportunity (AO) Mailing List Update

If your current address is NOT up-to-date, please fill out this form completely.

This is the update form for the NASA Office of Space Sciences (OSS) NRA/AO mailing list. Please fill out CONTACT INFORMATION completely. Check only those that apply in Institution Type and Discipline. Fold the form, secure with tape, and mail it back to the address on the reverse side. Proper postage must be applied.

Please check which announcements you would like to receive:

- ☐ 1. NASA Research Announcements (basic, non-flight, on-going research)
- ☐ 2. Announcements of Opportunity (specific space flight mission)

Must check one, please include code number from mailing label:

- ☐ 1. Please *add* my name to the mailing list.
- ☐ 2. Please *remove* my name from the mailing list (please attach mailing label)
- ☐ 3. Please *update* my current listing.

CONTACT INFORMATION If your address has changed or your mailing label is incorrect, please provide *COMPLETE* contact information.

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Street:

City: | State: | Zip:

Telephone No: | Fax No:

E-Mail Address: | Internet Address:

Country: (foreign addresses, please specify)

Institution Type
(check only those that apply)

- ☐ 1. College or University
- ☐ 2. Minority College or University
- ☐ 3. Foreign Addressee
- ☐ 4. Minority Business
- ☐ 5. NASA HQs/Center
- ☐ 6. Nonprofit Corporation
- ☐ 7. Other Government Agency
- ☐ 8. Private Industry
- ☐ 9. Small Business

Societies:

- ☐ A. American Astronomical Society
- ☐ B. American Geophysical Union
- ☐ C. Others _____

Discipline:
(check only those that apply)

1. Astronomy and Astrophysics

- ☐ A. Theory and Modeling
- ☐ B. Instrumentation (Technology Dev)
- ☐ C. Laboratory Astrophysics
- ☐ D. Data Analysis (Archival)
- ☐ E. Observational Programs

2. Solar System Exploration

- ☐ A. Planetary Atmospheres and Astronomy
- ☐ B. Planetary Materials and Geochemistry
- ☐ C. Planetary Geology and Geophysics
- ☐ D. Instrument Development
- ☐ E. Origins of Solar Systems
- ☐ F. Exobiology

3. Space Physics

- ☐ A. Cosmic and Heliosphere Physics
- ☐ B. Solar Physics
- ☐ C. Magnetospheric Physics
- ☐ D. Iono-Thermo-Mesospheric Physics

4. Information Systems/Computer Science

- ☐ A. High Performance Computing and Networking
- ☐ B. Scientific Data Analysis and Visualization
- ☐ C. Science Data Storage and Management
- ☐ D. Software Technology

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